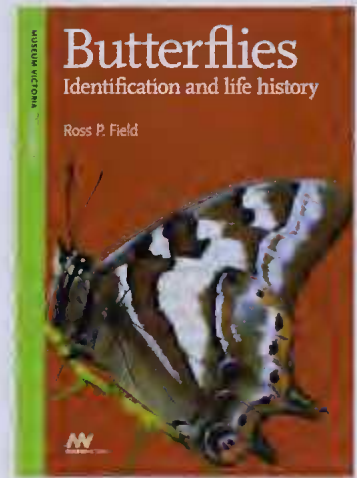


Butterflies: identification and life history

by Ross Field

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The most recent guide to the butterflies of the state of Victoria was published about 120 years ago—in 1893–94, a two-part compilation entitled *Victorian Butterflies and How to Collect Them* by Anderson and Spry. Thus it is with celebration that Victoria finally has a modern, up-to-date, comprehensive field guide to the butterflies of the state. Most other states of Australia have long had regional guides to their butterfly faunas: South Australia (Fisher 1978); Queensland (Valentine 1988); Tasmania (McQuillan and Virtue 1994); and Western Australia (Hay *et al.* 1994). It is great to see that Museum Victoria has taken the initiative to include this book among the growing list of impressive regional field guides to Australian butterflies.

One hundred and twenty-eight species of butterflies have now been recorded from Victoria, substantially more than the 74 species documented by Anderson and Spry. Of these, 17 species are non-resident (although some of these may enter the state and breed, temporarily). Populations of a further four species (Rock Ringlet, Orange Ringlet, Small Bronze Azure, Eastern Large Bronze Azure) are no longer extant, for reasons that are not entirely clear but probably relate to habitat loss/modification. A staggering 19 taxa have been listed as threatened under the *Flora and Fauna Guarantee Act*, emphasising the heightened conservation concern for these insects.

The stated goal of the book is to 'provide a unique opportunity for enthusiasts and nature lovers to readily identify not only the adult stages, but larvae and pupae that may be encountered in backyards or further afield'. The author hopes that the field guide will be used to identify butterflies and to provide an insight into their ecology, enabling authorities and the general public to be better informed about the

environment we live in and manage. In general, these broad objectives are achieved admirably.

The book begins with a series of introductory chapters, which cover aspects of biology, morphological structure of the adult and immature stages, classification, natural enemies, distribution, habitats, study (observing, collecting, preserving, rearing, gardening) and conservation. There is also an important section on how to use the book. This is followed by the species accounts, which are arranged systematically according to modern classification. A checklist of Victorian butterflies, glossary and an index of scientific names and common names complete the work.

The species accounts make up the bulk of the book. Each of the 128 species recorded from within Victoria, plus two additional species that occur just over the border on the Murray River in New South Wales, are depicted over a two-page spread, with the text on the left and illustrations on the right. The text includes notes on identification, larval food plants, biology, habitat and range. The illustrations show the adult butterfly, usually of museum-preserved specimens augmented with photographs of live butterflies taken *in situ*, together with photographs of the egg, larva and pupal stages. In general, the illustrations depicting the adult and immature stages are good to excellent and all are reproduced in colour: the author has clearly opted for quantity rather than quality with more than 1000 images—an impressive feature in itself. Of particular value are the microscopic

images of the embryonic stage, which have been processed using the latest digital software. Another novel aspect is inclusion of illustrations of the larval food plant or habitat, a feature that is notably absent in previous guides.

The inclusion of distribution maps for each species using point data, based primarily on museum collections, is a particular strength. Wisely, the author has divided the data into two time intervals, those records obtained before 1970 and those from 1970 onwards. This is in line with contemporary conservation analysis because records generated before 1970 are far less precise spatially than those obtained in more recent decades. The method also allows for detection of possible changes (e.g. range contraction) in geographical distribution; for example, the spatio-temporal records for the Banded Grass-Skipper and Fiery Jewel suggest that both have now been lost from central Victoria. It would have been useful to distinguish the residents from the vagrants/immigrants that do not breed or rarely breed within the state, and one has to search the text or species checklist to obtain this information. Similarly, records that have been shown to be in error or comprise accidental introductions that failed to establish ought to have been excluded or coded differently on the map, a case in point being the Common Pencilled-blue from Melbourne. Below the distribution map is a phenological chart showing the time of year at which adults have been recorded; a pleasing aspect of this chart is that the months of most frequent occurrence (according to percentage of adult specimens records) are distinguished from those in which adults have rarely been recorded. This is very useful information because it tells you the months when you are most likely to encounter the butterfly; for example, the Varied Sword-grass Brown, which has a long flight period, has most frequently been recorded from November to March, indicating that is the best time of the year to see it.

I found few faults with this book. The author has done well to summarise the vast (and ever expanding) knowledge of and information on Australian butterflies published in the primary scientific literature, and the nomenclature used is up-to-date, although few readers would probably realise that the Golden-rayed Blue (Victoria's only endemic species) was actually

described in 2004 rather than in 2000 as indicated in the entry for that species. There is some inconsistency in use of common names in the introductory chapters (e.g. Imperial Blue instead of Imperial Hairstreak, and Wood White instead of Spotted Jezebel). It is advised that data labels of specimens be presented in decimal minutes, but this is a cumbersome coordinate system to use and I would not recommend it (far better to use degrees minutes seconds, or decimal degrees for mapping purposes). The term 'endemism' is used incorrectly in discussing the extent of range-restricted species within each major geographical area of Victoria.

I do have reservations that the book will serve as a primary source for identification, particularly for taxonomically difficult groups (most skippers, some browns, and many blues) because the illustrations of the adults do not provide enough information and diagnostic features by which to distinguish these butterflies clearly. Perhaps my most major concern is that 'Victoria' is omitted from the title! This is a guide to the butterflies found in Victoria, and as such the title is a bit misleading. While it is true that many of these species extend into adjacent states the focus of the work is definitely at the state level.

Dr Field is to be congratulated for assembling this authoritative guide. The book is both attractive and affordable. It should appeal to naturalists, amateur entomologists, students, environmental consultants and conservation planners. The wealth of high quality images in colour reflects the revolution in digital photography and the author's passion for these insects. I have no doubt it will inspire the next generation of butterfly naturalists and entomologists alike.

References

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